

## Improved Snow Plough for Railways.

To

*— Eaton & Quinn  
Superintendent  
Grand Trunk Railway*

Having obtained Letters Patent, No. 374, for an "Improved Snow Plough for Railways," I take the liberty of enclosing you the annexed description of the Invention, in the full confidence that it cannot fail to prove of practical value and utility to Railway Companies whose lines are subject to blockade by snow drifts.

The Patent of this Invention I am now prepared to dispose of, and will be happy to entertain any proposition to that end with which you may honor me, on the part of the Railway Company you represent.

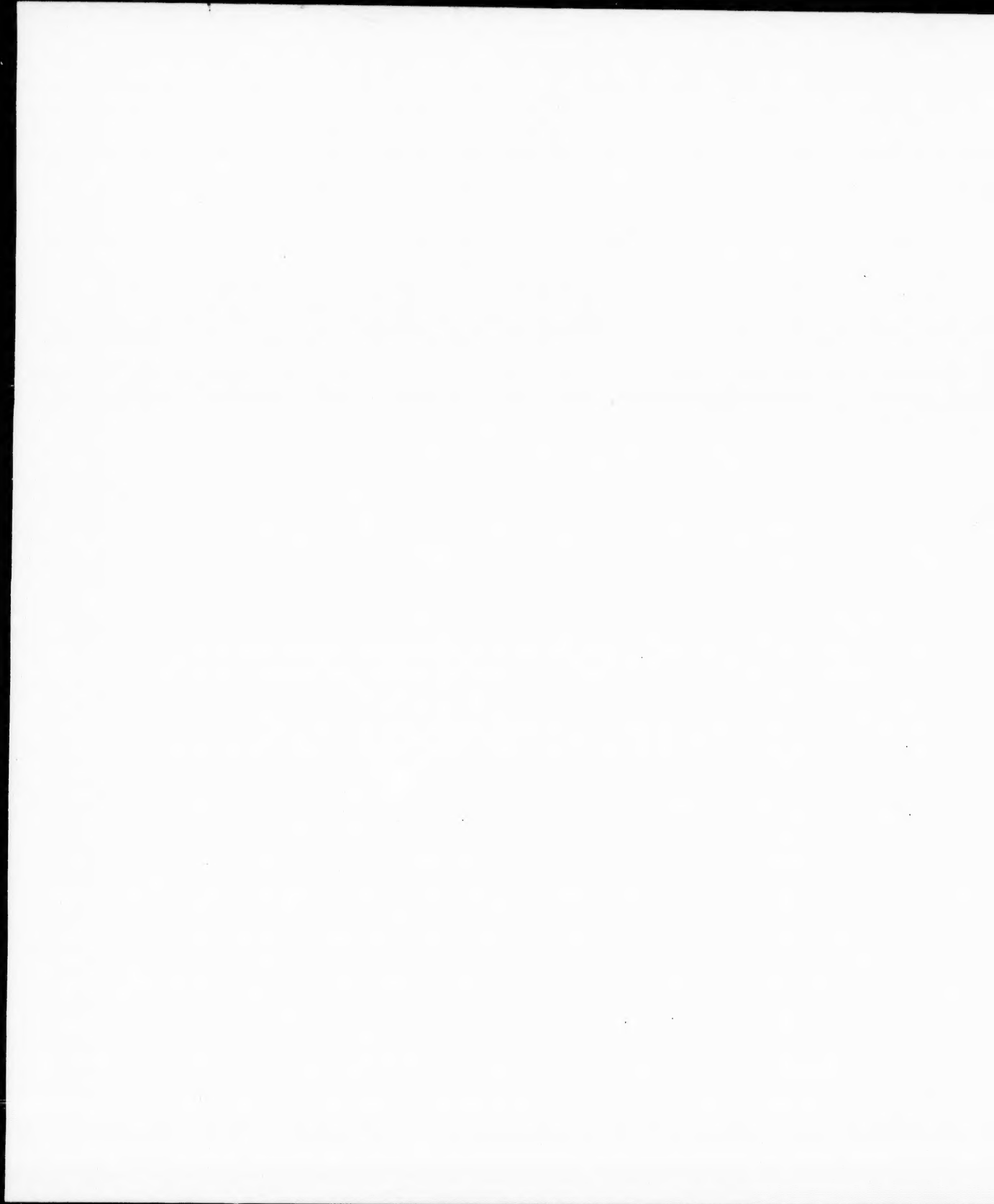
I have the honor to be, Sir,

Your very obedient servant,

Denison Avenue,

Toronto, Ont., October, 1870.

JOHN CARR.



# DESCRIPTION

OF

## "Carr's Improved Snow Plough for Railways."

SECURED BY LETTERS PATENT, DATED APRIL 25, 1870.

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"The invention consists of a double-leaved plow, constructed so as to dump its load to each side; the frame work of said plow being pivoted, transversely of its truck, in such a manner that it may be made to assume a horizontal posture after having, in its inclined position, been forced into a field or drift of snow, and thus take up a load and support it while the engine is running back, the leaves of the plow being connected by a two-branched cord or chain, passing over a pulley placed in the top of a pillar above the floor of the plow-truck, with a windlass beneath such floor, said windlass being fixed upon a shaft, bearing, near one end, a cog-wheel, and sustained at that end in a sliding box, in such a manner that the cog-wheel may be slid into a gear with a toothed pinion on the front axle of the locomotive, and therefrom drive the motion requisite to lift, by means of said chain or cord the leaves of the plow, and thus cause them to dump their load; the toothed pinion on the locomotive axle being made in two pieces, connected by bolts, and fixed upon another.

The plow-frame is a simple rectangle, oblong in shape, and pivoted upon the truck.

In running forward to clean the track of snow, the frame is inclined, so that the point is lowered within two inches of the rail.

A toggle lever is pivoted at its upper extremity, to each upper corner of the frame, and at its lower extremity to the truck vertically beneath.

Bars connect the central joints of the toggle levers with wrist-pins in the side of a toothed wheel, in such a manner that by rotating the crank-wheel in the proper direction, which crank-wheel is suitably connected by shafts and gearing with the wheel, the toggle-levers may be straightened out or drawn together, thus lowering the upper end of the plow-frame, and drawing the latter from an inclined posture to a horizontal one, or the reverse. The former operation is performed when it is desired to take up a load of snow upon the shovel, preparatory to running the engine back, for the purpose of delivering such load in a clear space.

The plow-frame sustains the leaves of the sheet metal, suitably braced and stayed, and hinged at their outer sides to the outer edges of the frame, the leaves being of a sufficient width to wholly cover the frame.

On arriving at the clear space spoken of, the leaves are lifted from the centre, in order to dump the load. Such lifting is effected by a two-branched cord, fastened at its lower end to handles projecting downward, one from the inner and upper corner of each leaf.

The cord or chain passes over a sheave in the top of a pillar, fixed in the truck floor. The cord runs thence through the truck floor, and is fastened at its other extremity, to a windlass, on a shaft, placed transversely of the plow-truck, and sustained, at its end, in boxes affixed to the under surfaces of the side beams of the truck.

One of the boxes has slots in it, by means of which it is made to slide on its fastening screws.

There is a shaft which sustains a cog-wheel, which, owing to the adjustability of the shaft, may be thrown into or out of gear with a toothed pinion on the locomotive axle. A hand-lever is the instrument by which the shaft is moved.

When the engine is running back, and the wheels are thrown into gear, the cord is wound around a windlass and brings a strain upon the handles, which at once lifts the leaves of the plow, and causes them to dump their load.

The load discharges and the leaves thrown out of gear, the leaves fall into position again, of their own weight.

The toothed pinion is made in two parts, each part having a flange upon it, through which to pass the connecting bolts. Thus the pinion may be readily taken off from one axle, and fixed upon another, at pleasure. It is from this pinion the power is derived by which the plow is depressed at the point and elevated as desired, and the load of snow dumped when the open space is reached, as before indicated.

The point of the plow is again lowered, the locomotive driven forward to the snow-drift, another load taken on the plow, the point elevated to a level, the engine backed to a suitable point for dumping the snow, the leaves of the plow elevated from the centre and the load dumped—and this operation is repeated until the snow-drift is all removed and the track cleared and ready for use by the trains.